Regional Jets

Global production of regional jets is dominated by two manufacturers—Canada's Bombardier and Brazil's Embraer. Regional jets are typically considered to be commercial jet transport aircraft with fewer than 100 seats. However, this traditional defining line is blurring as large regional jets come closer to the smallest product offerings of Boeing and Airbus. Orders and deliveries of regional jets grew rapidly in the 1990s as airlines used them to fill a unique market niche. More recently, deliveries have slowed, and some analysts believe that the natural annual market for regional jets is around 200 aircraft. Despite the downward trend in demand, three other countries—China, Russia, and Japan—are currently developing regional jets. Regional jet deliveries were up for Embraer but down for Bombardier in 2008; new orders, however were down for both companies (see Charts 1 and 2, next page).

Figure 1: Revenue for Regional Jet Manufacturers Embraer and Bombardier

Company	Products	2009 Revenue from Aviation[1]	2009 Net Income (all Business Units)	2008-2009 % Change in Income
Bombardier	Regional jets and turboprops; business jets	$6.628 (through Q3)	$528 million (through Q3)	-26%
Embraer	Regional jets, business jets	$5.47 billion	$248.5	-36%

Trends

Bombardier enjoyed a three-year head start over Embraer in delivering its first regional jet, but has not dominated the market. Embraer has delivered more jets each year since 2006 (see Chart 1, next page) and had a backlog 2.5 times as large as Bombardier (by number of aircraft) as of this writing. Both firms, however, experienced significant declines in 2009—total orders declined 70 percent from 2008 levels (see Chart 2).

Both regional jet manufacturers are beginning to focus on larger aircraft models. Though the regional jet market began with an emphasis on 50-seat jets, the largest market for today's regional jets is 70-seats and larger. In fact, both manufacturers offer aircraft with more than 100-seats, which is traditionally the market segment dominated by Boeing and Airbus. Embraer's

[1] Neither company had released an annual report for the most current fiscal year as of this writing. Embraer figures for 2009 are available but Bombardier figures reported only through Q3. Bombardier's revenue figures are for its aircraft division but its income figures are for the entire company; Embraer's figures are for the firm as a whole. In both cases, number reflects both aircraft sales and the sale of related services.

ERJ 190, which seats up to 114, currently accounts for 70 percent of its backlog by number of units (up from 56 percent last year). Bombardier has launched an even larger product line—the C Series—which will compete with Boeing's 737s and Airbus's A320s.

Chart 1: Regional Jet Deliveries, 2000-2009[2]

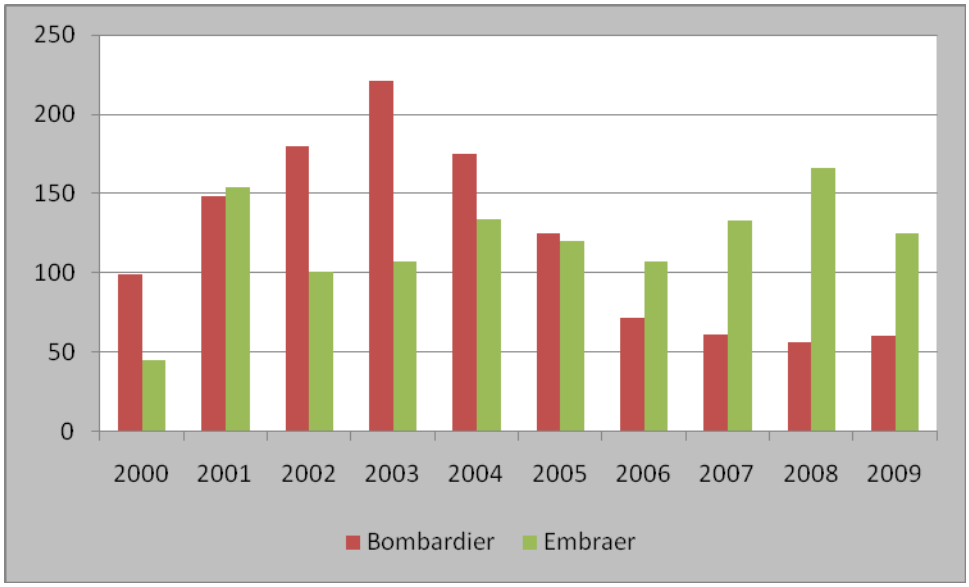
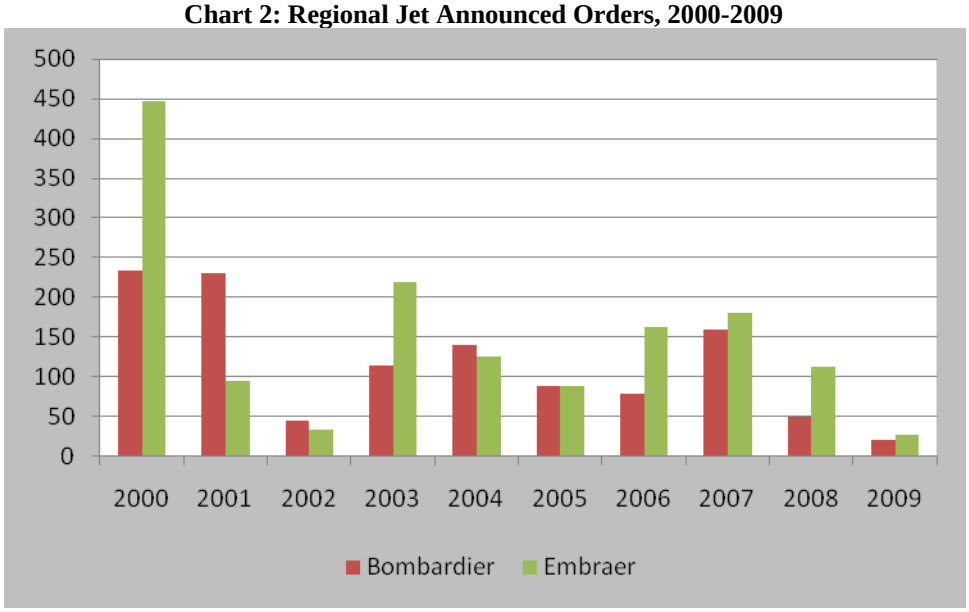


Chart 2: Regional Jet Announced Orders, 2000-2009



[2] U.S. Department of Commerce analysis of regional jet data from *Speednews*.

Outlook

Major manufacturers' forecasts agree that demand for larger regional jets will outpace the demand for smaller regional jets. In particular, the highest growth is forecast for the market over 100 seats, and this is spurring the development of larger aircraft by the regional jet manufacturers. As yet unclear, however, is whether the four companies will become direct competitors at the low-end of the single-aisle market, or whether Boeing and Airbus will focus on larger single-aisle aircraft.

Figure 2: Market forecasts, 2009-2028[3]

Rolls-Royce		**Boeing**	
30-50 seats	1,695	< 90 seats	2,100
70-90 seats	4,843	90-175 seats	16,430
Up to 110	1,307		
Bombardier (incl. turboprops)		**Embraer**	
20-59 seats	300	30-60	650
60-99 seats	5,800	61-90	2,450
100-149 seats	6,300	91-120	3,650

The United States typically has been the largest market for regional jet deliveries. Though North America should remain the largest market, industry forecasts predict that its market share will drop. Europe/Russia and China are expected to be the next largest markets for deliveries, though even combined their market share will account for less than North America's.

Regional jet development is becoming increasingly global, with new projects under way in China, Russia, and Japan. The Chinese and Russian jets are approximately the same size—the Chinese ARJ21 is 78-90 seats and the Russian SuperJet is 75-95 seats. A stretched version of the ARJ21 is planned that would increase its capacity to 105 seats. Both programs have been delayed multiple times, though they are both now it the test-flight phase. The Japanese Mitsubishi Regional Jet was formally launched in April 2008 and is expected to enter into service in 2013. All three aircraft will be seeking certification outside of their home markets.

[3] Airbus was not included because the company does not provide a forecast for aircraft below 100 seats for this time period.

Figure 3: Backlogs

Company	End 2008[4]	End 2009[5]
Bombardier	127	93
Embraer	426	265
ACAC	75	240
UAC	40	153
Mitsubishi	15	15

It is unclear whether there is enough global demand to make all of these programs economically viable. Even the most optimistic forecasts predict that on-average only 300 aircraft with fewer than 100 seats will be delivered annually. The current regional jet manufacturers have been able to meet that level of production in the past. The Chinese market is expected to absorb somewhere between 600-900 aircraft with fewer than 100 seats by 2026 and Russia/CIS less than 200. Even if each country's demand goes entirely to its domestic manufacturer, on-average that means that they will deliver 45 and 10 planes per year, respectively. Though that level of production may be sufficient as these programs start off, they will require foreign markets to be sustainable. Likewise, given the size of the Japanese market, it is unlikely that those aircraft could all be absorbed domestically.

[4] Speednews. "Status of Commercial Aircraft Programs: December 31, 2008." January 30, 2009.
[5] Speednews. "Speednews Commercial Jet Aircraft Program Status: December 31, 2009." January 15, 2010.